

Content available at: <https://www.ipinnovative.com/open-access-journals>

IP Annals of Prosthodontics and Restorative Dentistry

Journal homepage: <https://www.aprd.in/>

Original Research Article

Assessment of anxiety in patient's undergone surgical extraction and root canal treatment – A comparative study

Athikesavan Jayasenthil^{1*}, Anjana Rajendran¹, Sree Vidya Gopal¹, Purushotham Mohankumar¹¹Dept. of Conservative Dentistry and Endodontics, Priyadarshini Dental College and Hospital, Pandur, Tamil Nadu, India

ARTICLE INFO

Article history:

Received 28-11-2023

Accepted 20-02-2024

Available online 15-05-2024

Keywords:

Anxiety

Extraction

Root canal treatment

Pain

ABSTRACT

Aim: To quantitate and compare the anxiety level associated with patients who have undergone surgical extraction of teeth and root canal treatment.**Materials and Methods:** This study was conducted on 100 patients who reported to the Department of Oral and Maxillofacial Surgery (50) requiring surgical extraction of teeth and Department of Conservative Dentistry and Endodontics (50) requiring root canal treatment. Patients were randomly enrolled for the study and were given a questionnaire after the completion treatment (extraction and root canal treatment). The anxiety levels were evaluated based on the scores of the Corah's Dental Anxiety Scale.**Results:** The results of the present study showed that the dental anxiety was higher among subjects who have undergone surgical extraction of teeth when compared to the patients undergone root canal treatment.**Conclusion:** In conclusion, maxillofacial surgeons should consider that patients initially visit dental office for treatment of surgical extraction of teeth with severe anxiety which could be due to conditioning or learned responses which these patients might have experienced or first visit. Thus a prior awareness of the patient's predisposition to dental anxiety may be of value, enabling to take appropriate measures pre-operatively. Thus our aim is to give anxiety free dental treatment to the patients and better postoperative recovery.This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.For reprints contact: reprint@ipinnovative.com

1. Introduction

It is a well-known fact that patients who undergo dental treatment experience anxiety due to the pain and discomfort involved in the procedure. Anxiety is a term used to describe nervousness, fear, and worrying. It is an unpleasant emotional state with unclear causes that is frequently accompanied by physiological changes and behaviours that resemble those caused by fear.¹ Anxiety related to surgical extraction of teeth and root canal treatment is most common phenomenon.² Dental anxiety is widely thought to have its roots in childhood and to continue to grow as a result of

family influences and unpleasant conditioning.³ The most common treatments that cause it are those that include injecting anaesthesia and using a drill to remove teeth.

Dental anxiety can have a variety of causes, such as prior experiences, trauma, and congenital factors.⁴ Pain is often cited as both an aetiological and a maintaining factor in dental anxiety, but not all patients who experience pain during dental procedures develop disabling dental anxiety, and not all patients whose overestimation of dental pain is unconfirmed necessarily reduce their recall of past pain or prediction of future pain. Patients' anxiety may be influenced by age, sex, educational standard, and personality.⁵

* Corresponding author.

E-mail address: ajse2000@gmail.com (A. Jayasenthil).

Reassurance and adequate pain control are the most important factors which should start from the first visit of the patients; otherwise, it is difficult to give meaningful responses without adequate explanation.⁶ Dental anxiety may be confined to dental situations or be a symptom of more general worry. The patient's preoperative assessment of anxiety about the procedure should be included in the questionnaire in order to know the amount of explanation required.⁴ Comprehensive care of the concerned patients is crucial due to the immense difficulties and barriers associated with performing complex procedures on patients whose behaviours can range from cooperative to obstructive. Although tooth extraction surgery is widely used, little research has been done on patients' fears related to it, so comprehensive questionnaires to assess patients' preoperative and postoperative fear and anxiety about the procedure are necessary. The most crucial elements are reassurance and adequate pain control, which should begin on the patient's first visit, as it is difficult to provide meaningful answers without sufficient explanation.^{4,6}

2. Materials and Methods

The study was conducted based on questionnaire survey on 100 patients randomly, 50 patients who were underwent Surgical extraction and Root canal treatment, reported to the Department of Oral and Maxillofacial Surgery and Department of Conservative and Endodontics respectively. The study's objective was explained to all of the patients. After the consent obtained from each patient case history, pre-operative investigations, and relevant findings were recorded using a prestructured proforma. Inclusion criteria include patients who are undergoing surgical extraction and Root canal treatment for the first time. Also the study was done only in patients who were not hypertensive. Dental anxiety level was measured by using Corah's Dental Anxiety scale (DAS). These questionnaires were given to patients requiring surgical removal of teeth and root canal treatment.

In 1969 Corah published a scale for assessment of dental anxiety. The scale contains four multiple choice items dealing with the patients subjective reactions about the various procedures in the procedure of surgical extraction and root canal treatment. Answers to individual questions are scored 1 to 4 (with "a" as 1 and "d" as 4). The maximum score possible is 20

1. If you had to go to the dentist tomorrow for a check-up, how would you feel about it?
 - (a) I would look forward to it as a reasonably enjoyable experience.
 - (b) I wouldn't care one way or the other.
 - (c) I would be a little uneasy about it.

- (d) I would be afraid that it would be unpleasant and painful.
 - (e) I would be very frightened of what the dentist would do.

2. When you are wearing in the dormers office for your turn on the chair, Now do you feel?
 - (a) Relaxed
 - (b) Tittle uneasy
 - (c) Tense
 - (d) Anxious
 - (e) So anxious that I sometimes break out in a sweat or almost feel physically sick.
3. When you are in the dentist's chair waiting while the dentist gets the drill ready to begin working on your tenth, how do you beet?
 - (a) Relaxed
 - (b) Little uneasy
 - (c) Tense
 - (d) Anxious
 - (e) So anxious that I sometimes break out in a sweat or almost feel physically sick_
4. Imagine you am in the dentist's chair to have your teeth cleaned. Whale you are waiting and the dentist or hygienist is getting out the instruments which will be used to scrape your teeth around the turns, how do you fool?
 - (a) Relaxed
 - (b) Tittle uneasy
 - (c) Tense
 - (d) Anxious
 - (e) So anxious that I sometimes break out in a sweat or almost feel physically sick.

Scores:

5 to 10 are considered as slightly anxious, 10 to 15 are moderately anxious and 15 to 20are severely anxious.

2.1. Statistical analysis

The data was analysed by using descriptive analysis and frequency distribution.

3. Results

The anxiety scores of patients undergoing extraction were calculated. The respective mean scores of both groups are
 Patients undergoing Surgical Extraction: 1292
 Patients undergoing Root Canal Treatment: 923
 Anxiety levels of patients undergoing Extraction is significantly higher than in patients undergoing Root Canal Treatment.

4. Discussion

An unpleasant emotional condition, anxiety has less clearly defined origins. Physiological changes and behaviour similar to those caused by fear are regularly observed. Fear is a recognised external threat's emotional, physiological, and behavioural response.⁷ Additionally, hormonal, vascular, and muscular alterations can be brought about by emotional and psychological variables. These changes might result in peripheral abnormalities such as discomfort, xerostomia, ulcerations, and disturbances in jaw movement.⁸ Though anaesthetics make dental treatment easy and painless, undergoing such treatment arouses patients' fears and often results in great anxiety. Many oromucosal diseases arise as a direct expression of emotions or as an indirect result of psychological alterations. Emotional factors have the potential to influence not only the body but also the oral cavity.⁹

Many studies conducted over the past 50 years have consistently demonstrated the detrimental effects of anxiety, including moderate to high levels of postoperative pain intensity, psychological co-morbidity, and a higher incidence of post-traumatic stress reactions. Anxious behaviour in response to particular stimuli can be interpreted as a physiological mechanism of adaptation in unknown situations.^{10,11}

Surgical tooth extractions are among the most frequent causes of dental anxiety. Anxiety not only causes mental discomfort, but it can also create patient behaviour that impedes the treatment, often making it take longer and complicating the healing process after the procedure.¹² Certain demographic groups experience varying degrees of dental anxiety. Research has indicated that those in younger age groups, those with lower incomes or socioeconomic status, those with less education, and those who have never visited a dentist before are more likely to experience severe dental anxiety than older, wealthier, better educated, and those who have had dental treatment in the past.¹³

In the current study, Corah's Dental Anxiety Scale (DAS) was used to quantify the anxiety level associated with patients who have undergone surgical extraction of teeth and root canal treatment. Out of many different scales, Corah's DAS is a reliable, valid, and useful predictor of patient's anxiety before treatment, helping the dentist in two ways: he can take measures to help alleviate the patient's anxiety.

By showing patients a tooth extraction film prior to surgery, dental fear and anxiety associated with extractions under local anaesthesia can be minimised.¹² Topical anaesthetic (20% benzocaine) was injected at the injection site to alleviate postoperative discomfort associated with dental extractions performed under local anaesthesia.¹³ Depending on the patient's characteristics, degree of dental anxiety, and clinical circumstances, dental anxiety can be treated with pharmaceutical interventions, psychotherapy interventions, or a combination of both. psychotherapy

interventions can be behaviorally or cognitively oriented.

Pharmacologically, these patients can be treated with either general anaesthesia or sedation. Behaviour-modification therapies use guided imagery and physiological monitoring with biofeedback, acupuncture, hypnosis, distraction, positive reinforcement, stop-signalling, and exposure-based treatments like systematic desensitisation, "tell-show-do," and modelling in an effort to change undesirable behaviours through learning.¹⁴

The overall health status of patients and the economic standing of nations (and, consequently, the resources allotted to the healthcare sector) may also have an impact on patients' perceptions and levels of anxiety; however, none of these potentially significant factors were mentioned in the studies reviewed in this report. Moreover, a number of the non-pharmacological interventions were implemented several weeks prior to the day of surgery; the time between the application of these interventions and the day of surgery may also play a role in determining how effective they are at lowering anxiety levels. Lastly, the majority of the non-pharmacological interventions used in the reviewed studies were operator-driven, with patients receiving them passively.¹⁵

Providing accurate and predictive information can help reduce uncertainty, which in turn helps reduce anxiety. Alternatively, patients can be encouraged to focus on the present rather than the future, which can help them become more tolerant of uncertainty. This strategy integrates the concept of mindfulness into cognitive behavioural therapy, helping those who suffer from anxiety to understand that uncertainty about the future does not need to rule their lives.¹⁶

The Dentist can counteract the impacts of hearsay, avoid unpleasant experiences, and lessen worry by showing compassion, managing pain effectively, providing knowledge, and teaching coping mechanisms.¹⁷

5. Conclusion

The results of our study showed that the dental anxiety was greatest among the people who have undergone surgical extraction than in patients undergone root canal treatment. So it is concluded that dental anxiety has a moderate but significant correlation with intraoperative dental extraction pain. The aetiology for dental anxiety is multifactorial, and hence there is no monotherapy for management. Proper appraisal of the patient and identifying the source and level of anxiety may enable the dentist in deciding a suitable treatment plan.

6. Source of Funding

None.


7. Conflict of Interest


None.

References

- Garip H, Abali O, Goker K, Gokturk U, Garip S. Anxiety and extraction of third molars in Turkish patients. *Br J Oral Maxillofac Surg.* 2004;42(6):551–4.
- Yusa H, Onizawa K, Hori M, Takeda S, Takeda H, Fukushima S, et al. Anxiety measurements in university students undergoing third molar extraction. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2004;98(1):23–7.
- Thomson MW, Locker D, Poulton R. Incidence of dental anxiety in young adults in relation to dental treatment experience. *Community Dent Oral Epidemiol.* 2000;28(4):289–94.
- Mendez LL, Freitas DM, Senra-Rivera C, Seoane-Pesqueira G, Gándara-Rey JM, Garcia-Garcia A, et al. Dental anxiety before removal of a third molar and association with general trait anxiety. *J Oral Maxillofac Surg.* 2006;64(9):1404–8.
- Lopez-Jornet P, Camacho-Alonso F, Sanchez-Siles M. Assessment of general pre and postoperative anxiety in patients undergoing tooth extraction: a prospective study. *Br J Oral Maxillofac Surg.* 2013;52(1):18–23.
- Earl P. Patients' anxieties with third molar surgery. *Br J Oral Maxillofac Surg.* 1994;32(5):293–7.
- Suresh KV, Shenai P, Chatra L, Ahammed Y, Ronad A, Kumar CM, et al. Yusuf Ahammed, Mounesh kumar. . *Biological Biomedical Rep.* 2012;1(1):13–6.
- Suresh KV, Ganiger CC, Ahammed YA, Kumar MC, Pramod RC, Nayak AG, et al. Psychosocial characteristics of oromucosal diseases in psychiatric patients: Observational study from Indian dental college. *North Am J Med Sci.* 2014;6(11):570–4.
- Suresh KV, Shenai P, Chatra L, Ronad Y, Bilahari N, Pramod RC, et al. Oral mucosal diseases in anxiety and depression patients: Hospital based observational study from south India. *J Clin Exp Dent.* 2015;7(1):95–9.
- Schuurs AH, Hoogstraten J. Appraisal of dental anxiety and fear questionnaires: a review. *Community Dent Oral Epidemiol.* 1993;21(6):329–39.
- Hermes D, Matthes M, Saka B. Treatment of anxiety in oral and maxillofacial surgery. *J Craniomaxillofac Sur.* 2007;35(6-7):316–21.
- Gazal G, Tola AW, Fareed WM, Alnazzawi AA, Zafar MS. A randomized control trial comparing the visual and verbal communication methods for reducing fear and anxiety during tooth extraction. *Saudi Dent J.* 2016;28(2):80–5.
- Al-Samadani KH, Gazal G. Effectiveness of benzocaine in reducing deep cavity restoration and post-extraction stress in dental patients. *Saudi Med J.* 2015;36(11):1342–7.
- Gatchell RJ, Ingersoll BD, Bowman L, Robertson MC, Walker C. The prevalence of dental fear and avoidance: a recent survey study. *J Am Dent Assoc.* 1983;107(4):609–10.
- Dereci O, Saruhan N, Tekin G. The Comparison of Dental Anxiety between Patients Treated with Impacted Third Molar Surgery and Conventional Dental Extraction. *Biomed Res Int .* 2021;p. 7492852. doi:10.1155/2021/7492852.
- Grupe DW, Nitschke JB. Uncertainty and anticipation in anxiety: an integrated neurobiological and psychological perspective. *Nat Rev Neurosci.* 2013;14(7):488–501.
- Wong M, Lytle WR. A comparison of anxiety levels associated with root canal therapy and oral surgery treatment. *J Endod.* 1991;17(9):461–5.

Author biography

Athikesavan Jayasenthil, Professor and Head  <https://orcid.org/0000-0002-8772-6802>

Anjana Rajendran, Reader  <https://orcid.org/0009-0008-5438-4763>

Sree Vidya Gopal, Senior Lecturer  <https://orcid.org/0000-0003-0971-6614>

Purushotham Mohankumar, Reader

Cite this article: Jayasenthil A, Rajendran A, Gopal SV, Mohankumar P. Assessment of anxiety in patient's undergone surgical extraction and root canal treatment – A comparative study. *IP Ann Prosthodont Restor Dent* 2024;10(2):145-148.